"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

KHLYNOV, V. V., et al, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 47-50

layer to leak out of the gap between the two oxide surfaces. Various aspects of loss of stability are discussed. It is noted that the experimental results permit explanation of the fact that alumina inclusions are better removed from the metal than silicate inclusions. The stability of the thin interstitial layers of metal on approach of liquid particles to the slag layer or to each other leads to the fact that not every encounter is effective. Therefore, merging of the particles of liquid silicates or their absorption by slag is realized in accordance with the laws of slow coagulation. Joining of solid particles is not in practice retarded by the liquid metal interstitial layer; however, it is a very slow process. On the contrary, agglomeration of liquid particles with solid particles and absorption of the latter by slag take place quite rapidly.

It was found that the thin interstitial layers of steel between the oxide film on its surface and a liquid nonmetallic particle are stable. The stability time increases on conversion from ferrous inclusions to silicate inclusions. No stability is detected at the interface with solid alumina inclusions. The data clarify the better removal of inclusions when steel is killed with increased quantities of aluminum.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 621.373.8

GRUZINSKIY, V. V. and STRATSKEVICH, L. K.

"Effect of a Pulsed Longitudinal Magnetic Field on the Generated Power of an He-Ne Laser at $\lambda_{gen} = 1.15\ \mu$"

Minsk, Zhurnal prikladnoy spektroskopii, vol 16, No 6, 1972, pp 978-984

Abstract: This article is the continuation of an earlier paper by the same authors in the same journal (14, 1971, p 804) in which they considered the effect of a constant longitudinal magnetic field on the generated power of an He-Ne laser with an isotropically and nonisotropically polarized resonator over a wide range of pressures. The present paper considers the effect of a pulsed magnetic field under the same circumstances and with the same equipment. It is explained that the use of pulsed magnetic fields makes it possible to attain large values of magnetic field intensity without varying the construction of the solenoid. In the experiments described by the present paper, the isotropism of the laser was provided by setting the windows of the discharge tube at small angles to the resonator axis. The pulsed field was generated by a solenoid into which a battery of capacitors of 550 μF discharged. An FEU-22 was used to record the radiation, its signal

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UDC: 621.373.8

GRUZINSKIY, V. V., et al, Zhurnal prikladnoy spektroskopii, No 6, 1972, pp 978-984

being applied to an S1-19 oscillograph. As far as the authors know, the effect of a pulsed magnetic field on an He-Ne laser has never before been investigated. They thank N. A. Borisevich, Academician of the Belorussian Academy of Sciences, for his comments.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

GRUZINSKIY, V.V., and STRATSKEVICH, L. K.

"Effect of a Longitudinal Magnetic Field on the Oscillating Power of an He-Ne Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii, May 1971, pp 804-808

Abstract: The effect of an external longitudinal magnetic field on the oscillating power W(H) at wavelengths of 0.63 and 1.15 μ of an isotropic and anisotropic He-Ne laser was investigated. The studies were carried out for a broad range of pressures of the mixture and discharge currents. The isotropy of the laser was ensured by placing the windows of the discharge tube at specified angles when, owing to interference, the beams passed without loss to reflection. Anisotropy was obtained by the insertion of a plate in the resonator at the Brewster angle. Comparison of W(H) for both cases showed that the specific behavior of the function W(H) for an anisotropic laser is caused by polarization of the radiation. For an isotropic laser in an optimal mode of operation W was found to be independent of H up to 600 oe. A decrease in the oscillation threshold and an increase of W with H was obtained for various modes of constant current and high-frequency discharge. It was suggested that the onset of oscillation by the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

GRUZINSKIY, V. V., STRATSKEVICH, L. K., Zhurnal Prikladnoy Spektroskopii, May 1971, pp 804-808

application of a magnetic field to a discharge plasma be used to obtain a pulsed mode of oscillation and modulation of the generated radiation.

The article includes 4 figures. There are 12 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COPOLYMERIZATION OF ,EPOXYPROPYL,PYRROLIDINONE WITH ACRYLONITRILE, METHYL METHACRYLATE, OR STYRENE -U-

AUTHOR-(03)-MUKHITDINOVA, N.A., STRATU, Z.A., MARKMAN, T.V.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 71-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMERIZATION, EPOXY COMPOUND, PYRROLIDINE, KETONE, ACRYLONITRILE, STYRENE, METHYL METHACRYLATE, INTRINSIC VISCOSITY, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0921 STEP NO--UR/0291/70/014/002/0071/0074

CIRC ACCESSION NO--AP0137949
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 033
CIRC ACCESSION NO--AP0137949
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANIONIC POLYMN. OF 1,(2,3,EPOXYPROPYL),2,PYRROLIDINONE (I) IN THE PRESENCE OF 0.5-2 WT. PERCENT POTASSIUM ALCOHOLATE, METALLIC K OR POTASSIUPYRROLIDINONE (II) AT 60DEGREES FOR 50 HR GAVE POLY(1,(2,3,EPOXYPROPYL)PYRROLIDINONE) IN 62-90PERCENT YIELD, MOL. WT. 1000-3000. COPOLYMERS WITHLACTAM RINGS WERE OBTAINED BY ANIONIC COPOLYMN. AT 60DEGREES FOR 50 HR OF I WITH ACRYLONITRILE (III), ME METHACRYLATE (IV), OR STYRENE (V) IN THE PRESENCE OF II. N CONTENT, COPOLYMER YIELDS AND THEIR INTRINSIC VISCOSITIES IN C SUB6 H SUB6WERE DETD. COPOLYMERS OF I WITH III WERE SOL. IN ME SUB2 CO AND THOSE OF I WITH V IN C SUB6 H SUB6; THEY WERE INSOL. IN H SUB2 O. COPOLYMERS OF I WITH IV WERE INSOL. IN H SUB2 O AND CHCL SUB3. IR SPECTRA OF THE COPOLYMERS REVEALED THE FORMATION OF ETHER GROUPS INTHE CHAIN AND THE DISAPPEARANCE OF THE EPOXY GROUPS.
FACILITY: INST. KHIM., TASHKENT, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALUMINUM OXYGEN BOND ENERGIES IN SOME CHELATE COMPOUNDS OF ALUMINUM -U-
AUTHOR-(03)-MAY, L., VEVERE, I., STRAUSS, I.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SEV. 1970, (1), 118-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALUMINUM COMPLEX, BOND ENERGY, MASS SPECTROMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0670 STEP NO--UR/0464/70/000/001/0118/0119

CIRC ACCESSION NO--AP0119578
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119578
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGIES OF THE AL-O BOND IN BETA OXOENOLATES AND BETA OXOENOLATOALKOXIDES ARE DETD. BY UTILIZING THE EMPIRICAL RELATION OF THE ENERGY OF THE IONIC RUPTURE OF THE AL-O BOND TO THE POLARIZABILITY OF THE BOND AND THE ELECTRONEGATIVITY OF THE AL ATOM. THE CALCD. ENERGIES AGREE WITH THE VALUES DETD. BY USING THE MASS SPECTROMETRIC METHOD. FACILITY: INST. NEORG. KHIM., RIGA, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 621.762.002.5

GASUL', M. Yu., STRAUTMANIS, A. A., BAUMANIS, A. A.

"Batcher"

USSR Author's Certificate No 270206, Filed 28 Oct 68, Published 18 Aug 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract 4G472P)

Translation: A batcher used in the extrusion process containing a hopper and a powder feed mechanism is introduced. To decrease powder losses and increase batching accuracy, the batcher is equipped with a labyrinth attachment whose walls and knives are spring-loaded.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 621.372

VARFOLOMEYEV, I. N., YERMOLEYEV, A. A., ROZANOV, M. Ya., STRAUT, MANIS G. E.

"A Generalized Method of Analyzing Active Microelectronic RC Filters"

Teor. elektrotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Theoretical Electrical Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 11, pp 86-93 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A128)

Translation: The paper shows the necessity of four basic steps in design of microelectronic active RC filters. Particular attention is given to the first stage of design -- analysis. A generalized method is proposed for analyzing microelectronic RC filters in the steady-state mode on the BESM-4 digital computer. Three illustrations, five tables, bibliography of five titles. Resumé.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 621.317.411

GREVE, Yu. O., STRAUTS, A. S., RANKIS, G. Zh.

"Investigation of the Magnetic Spectra of Ferrites Subjected to a Magnetizing Field and Mechanical Stresses in Different Directions"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 125-126 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A358)

Translation: On the basis of a method previously developed by the authors for measuring complex permittivities and components of the tensor of magnetic permeability of ferrites and dielectrics with the use of a symmetric strip line, an installation is constructed for studying the magnetic spectra of ferrites in a band from a few tens of MHz to 10,000 MHz under the effect of an external magnetic field or mechanical stresses. The installation consists of a universal electromagnet in whose gap the strip line is located with the specimen of ferrite and a pickup of mechanical stresses. One illustration, bibliography of five titles. N. S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 577.4

STRAZDIN', I. E.

"Theoretical-Group Methods in Finite Automaton Theory"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines -- collection of works), Moscow, Nauka Press, 1972, pp 89-95 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V356)

No abstract

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

STRAZDIN', I. E.

"Group Invariance of Threshold Functions"

Mnogoustoych. Elementy i ikh Primeneniye [Multistable Elements and Their Applications -- Collection of Works], Moscow, Sov. Radio Press, 1971, pp 97-101 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V447 by L. Sholomov).

Translation: The concept of the threshold function is extended to the case of an l-valued (with any natural $l \geq 2$) and denumerably valued function. It is shown that classes of l-valued and denumerably valued threshold functions are closed relative to renaming of variables, diametric negation of values of variables from arbitrary subsets and diametric negation of values of functions.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

Acc. Nr. AP0049835 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR0409

103423f Infrared absorption spectra of some C-halo derivatives of 1,2,4-triazole. Grinsteins, V.; Strazdina, I.; Grinvalde, A. (Inst. Org. Sin., Riga, USSR). *Khim. Geterotsikl. Soedin.* 1970, (2), 248-58 (Russ). Absorption spectra were reported and provisional band assignments were made for 12 1,2,4-triazoles and their Ag and K salts, in which substituents were selected from H, Cl, Br, and the spectra were taken for the solid state of the substances.
G. M. Kosolapoff

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ON THE CHARGE DENSITY ON THE SURFACE OF DISPERSED PHASE OF GOLD HYDROSOL AT FAST COAGULATION THRESHOLDS -U-

AUTHOR-(05)-BARAN, A.A., GLAZMAN, YU.M., DERYAGIN, B.V., KUDRYAVTSEVA, N.M., STRAZHESKO, D.N.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 167-170

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GOLD COMPOUND, COAGULATION, MICROSCOPY, CALCIUM COMPOUND, YITRIUM COMPOUND, RUBIDIUM COMPOUND, HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0767 STEP NO--UR/0069/70/032/002/0167/0170

CIRC ACCESSION NO--AP0108968

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMOUNTS OF SORBED RB POSITIVE, CA PRIME2 POSITIVE AND Y PRIME3 POSITIVE COUNTERIONS AT THE FAST COAGULATION THRESHOLDS OF RED GOLD HYDROSOL HAVE BEEN MEASURED BY A RADIOMETRIC METHOD. THE COAGULATION THRESHOLDS HAVE BEEN DETERMINED FROM KINETIC CURVES OBTAINED BY FLOW ULTRAMICROSCOPY. ON THE BASIS OF THE DATA ON THE COUNTERIONS SORPTION IT HAS BEEN POSSIBLE TO ESTIMATE THE CHARGE DENSITY ON DISPERSED GOLD FROM THE SURFACE AREA VALUE. IT IS SUGGESTED THAT IN GOLD HYDROSOL THE OH NEGATIVE IONS ARE POTENTIAL DETERMINING.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RADIOMETRIC STUDY OF ION SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM AQUEOUS ORGANIC MEDIA -U-

AUTHOR-(04)-VDOVENKO, L.I., BARAN, A.A., GLAZMAN, YU.N., STRAZHESKO, D.N.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 350-353

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY

TOPIC TAGS--RADIOACTIVE TRACER, ION, MANGANESE OXIDE, IRON OXIDE, SORPTION, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1599 STEP NO--UR/0069/70/032/003/0350/0353

CIRC ACCESSION NO--AP0125221

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125221
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN ESTABLISHED BY A DIRECT RADIOACTIVE TRACER METHOD THAT THE COUNTERIONS SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM WATER MIXTURES WITH ETHYL ALCOHOL, ACETONE AND DIOXANE IS PRACTICALLY INDEPENDENT OF THE ORGANIC COMPONENT CONTENT IN THE MIXTURE. TO ACCOUNT FOR THIS FACT IT IS SUGGESTED THAT ON THE SURFACE OF SUFFICIENTLY HYDROPHILIC PRECIPITATES STUDIED A STRONG ADSORPTION FILM IS FORMED FROM WATER MOLECULES, WHICH DOES NOT DISINTEGRATE EVEN AT HIGH CONCENTRATIONS OF ORGANIC SOLVENTS IN THE BULK OF THE LIQUID PHASE. FACILITY: INSTITUT FIZICHESKOY KHIMII AN USSR, KIEV. FACILITY: TEKHNOLOGICHESKIY INST. LEGKOY PROMYSHLENNOSTI, KIEV.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 577.391:547.963.3

STRAZHEVSKAYA, V. B., KRIVTSOV, G. G., KRASICHKOVA, Z. I., and STRUCHKOV, V. A., Institute of Biological Physics, Pushchino

"Changes in the Supramolecular DNA and Residual Protein Complex in the Thymus and Liver of Gamma-Irradiated Rats"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 19-25

Abstract: The thymus (radiosensitive) and liver (radioresistant) of male white rats were studied following 1 kr gamma-irradiation to determine the amino acid composition of residual protein (RP) in supramolecular DNA (SMDNA). An analysis showed that RP in SMDNA in the thymus and liver is a nonhiston acid protein. Following irradiation, there is a 2-fold increase of RP in the thymus which returns to normal after 6 hours. Basic amino acids increase simultaneously. In the liver, RP increases by 42% after irradiation; this effect continues and reaches 180% in 6 hours. There is an increase in acidic amino acids. The elastoviscosity of RP in both organs changes. The RP-SMDNA bond is strengthened but "breaks up" when treated with 0.5% dodecyl sodium sulfate. The interaction of RP with damaged DNA is nonspecific and particular to a metabolizing cell, as irradiation of T_2 phage did not produce an increase in

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STRAZHEVSKAYA, N. B., et al., Radiobiologiya, Vol 12, No 1, Jan/ Feb 72, pp 19-25

RP. No clear correlation was established between RP content in DNA preparations and degree of elastoviscosity. RP might be a functional protein, since it correlates to the metabolic level in the cell. The authors conclude that the effect of iradiation on nuclear structures increases with the complexity of the biological system.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

UDC 577.391:547.963.3

USSR

STRAZHEVSKAYA, V. B., KRIVTSOV, G. G., KRASICHKOVA, Z. I., and STRUCHKOV, V. A., Institute of Biological Physics, Pushchino

"Changes in the Supramolecular DNA and Residual Protein Complex in the Thymus and Liver of Gamma-Irradiated Rats"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 19-25

Abstract: The thymus (radiosensitive) and liver (radioresistant) of male white rats were studied following 1 kr gamma-irradiation to determine the amino acid composition of residual protein (RP) in supramolecular DNA (SMDNA). An analysis showed that RP in SMDNA in the thymus and liver is a nonhiston acid protein. Following irradiation, there is a 2-fold increase of RP in the thymus which returns to normal after 6 hours. Basic amino acids increase simultaneously. In the liver, RP increases by 42% after irradiation; this effect continues and reaches 180% in 6 hours. There is an increase in acidic amino acids. The elastoviscosity of RP in both organs changes. The RP-SMDNA bond is strengthened but "breaks up" when treated with 0.5% dodecyl sodium sulfate. The interaction of RP with damaged DNA is nonspecific and particular to a metabolizing cell, as irradiation of T_2 phage did not produce an increase in

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USSR

STRAZHEVSKAYA, N. B., et al., Radiobiologiya, Vol 12, No 1, Jan/ Feb 72, pp 19-25

RP. No clear correlation was established between RP content in DNA preparations and degree of elastoviscosity. RP might be a functional protein, since it correlates to the metabolic level in the cell. The authors conclude that the effect of iradiation on nuclear structures increases with the complexity of the biological system.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

CARD

JPRS 60570

16 November 1973

UDC 621.383:3.001

INVESTIGATION OF HIGH VOLTAGE PHOTOCELLS AT LOW RADIATION INTENSITIES

[Article by A. P. Ignatenko, D. Sh. Rayzberg, V. A. Chistikov and V. A. Chvartkova; Tashkent, Geliotekhnika, Russian, No 1, 1973, pp 31-34, received 5 July 1972, FTP 3-6]

This paper describes the volt-ampere characteristics of high voltage photocells with f-type junctions at radiation intensities varying from 20 to 2500 lux. On the basis of the results obtained, the eaf varies linearly with the radiation intensity up to 500 lux.

High voltage photocells (VFP) with f-type p-n junctions(1)have a voltage of about 10 volts from a working surface of one square centimeter and an efficiency of about 10% at the usual illumination (0.1 watt/cm^2). The VFP current increases more than 1000 times (2) when the radiation flux density increases with a linear rise observed to a radiation density of 10 to 25 watt/m^2.

Fig. 1. Spectral characteristics: 1 -- radiator OI-19 (incandescent lamp); 2 -- VFP; 3 -- selenium photocell.
Key: a -- relative units; b -- wavelength, microns.

[I - USSR - F]

STREBKOV, D.S.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 621.472:621.383

STREBKOV, D. S., UMISHKOV, V. A., and CHVALKOVA, V. A.

"Design and Experimental Investigation of High-Voltage n^+-p-p^+ Photoconverter Structure"

Tashkent, Geliotekhnika, No. 4, 1971, pp 3-8

Abstract: This paper is based on an earlier article (Landsman, A. P. and Strebkov, D. S., Geliotekhnika, 1970, No. 2) in which it was shown that a base contact with a low resistance is a necessary condition for the efficient operation of a high-voltage photoconverter cell with a radiation concentrator. The present paper finds that the best way of attaining this condition is through an n^+-p-p^+ structure, and gives the results of theoretical and experimental investigations into this type of photocell. The authors begin the theoretical part of their paper by considering such a cell illuminated parallel to the plane of the p-n junction, in which the base region, of high-resistance p-type silicon, has a portion with a variable concentration of an acceptor impurity whose distribution is such as to provide a constant field accelerating minority carriers in their movement to the p-n junction. Measurements made in the experimental part of the article show that in several lots of the specimens tested, the width of the p region varied from

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

STREBKOV, D. S., et al., Geliotekhnika, No 4, 1971, pp 3-8

370 to 150 microns, the width of the n region from 2-4 microns, and the width of the metallic contact layer from 10-20 microns. Curves are given for the volt-ampere characteristics of the device for a light flux power of up to 7700 kW/m^2 in a biparaboloid optical oven consisting of light sources with an arc temperature of up to 5500° C. Spectral characteristics ranging from 400 to 1200 nm are also plotted. The authors are members of the All-Union Order of Red Banner Labor Scientific Research Institute of Current Sources.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR UDC 621.383.4(088.8)

LANDSMAN, A. P., ZAYTSEVA, A. K., ZADDE, V. V., STREBKOV, D. S.

"A Semiconductor Photoelectric Generator"

USSR Author's Certificate No 288161, filed 22 Apr 68, published 9 Mar 71 (from RZh-Elektrotekhnika i Energetika, No 9, Sep 71, Abstract No 9A107P)

Translation: A semiconductor photoelectric generator is proposed which is a set of microphotoconverters with PN junctions arranged parallel to the incident radiation. As a distinguishing feature of the patent, a radiation detector is produced which is sensitive to the infrared region of the spectrum near 1.05 μ with the width of the maximum being 0.1-0.2 μ for silicon, by using microphotoconverters with NPN or PNP structure. The generator is also distinguished by the fact that commutation of the emitter and collector regions is implemented over the end faces of the set of microphotoconverters. In addition, commutation of the base regions in the generator is done on the rear surface of the set of microphotoconverters with preisolation of the emitter and collector regions from the contact. One illustration.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR UDC 921.383.4(088.8)

LANDSMAN, A. P., ZAYTSEVA, A. K., ZADDE, V. V., STREBKOV, D. S.

"A Semiconductor Photoelectric Generator"

USSR Author's Certificate No 288159, filed 25 Jul 68, published 9 Mar 71 (from RZh-Elektrotekhnika i Energetika, No 9, Sep 71, Abstract No 9A106P)

Translation: A semiconductor photoelectric generator is proposed which is a cellular monolithic structure made up of microphotoconverters with PN junctions. As a distinguishing feature of the patent, the efficiency is increased to 50% and more with any spectrum of incident radiation with microminiature generator construction by arranging the PN junctions on at least four faces of the microphotoconverters, which are made in the form of cubes, parallelepipeds and polyhedra. Two illustrations.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 621.383.51:535.215.6

LANDSMAN, A. P., ZAYTSEVA, A. K., ZADDE, V. V., and STREBKOV, D. S.

"Method of Producing a Semiconductor Photoelectric Generator"

USSR Author's Certificate No 288160, filed 25 Apr 68, published 3 Feb 71 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B280)

Translation: A method is proposed for production of a photogalvanic generator on the basis of commutated microelements with p-n junctions. The coupling of the matrixes in the multilayer structure, which is cut into flat units perpendicular to the plane of the junctions, with subsequent creation of additional diffused junctions at the surface of a unit, makes it possible to obtain an efficiency of ~ 80 percent for monochromatic radiation. N.S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 047 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STUDY OF HIGH VOLTAGE PHOTOELECTRIC GENERATORS AT SUPERHIGH LIGHT FLUX CONCENTRATIONS -U-
AUTHOR-(02)-LANDSMAN, A.P., STREBKOV, D.S.

COUNTRY OF INFO--USSR

SOURCE--GELIOTEKHNIKA, NO. 2, 1970, P. 13-20

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, PN JUNCTION, CIRCUIT DESIGN, PHOTOELECTRIC EFFECT, IR LIGHT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1847 STEP NO--UR/0377/70/000/002/0013/0020

CIRC ACCESSION NO--AP0130677

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 047 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF HIGH VOLTAGE PHOTOELECTRIC GENERATOR CONTAINING PLATES OF SEMICONDUCTOR MATERIAL WITHIN WHICH A LARGE NUMBER (UP TO SEVERAL THOUSAND) OF SERIES AND PARALLEL CONNECTED PN JUNCTIONS ARE ARRANGED IN THE FORM OF A SOLID CIRCUIT. THE PLANES OF THE PN JUNCTIONS AND THE METAL CONTACTS ARE PERPENDICULAR TO THE WORKING SURFACE OF THE GENERATOR. THE TWO SIDED WORKING SURFACE, THE TRANSPARENCY OF THE GENERATOR TO THE INFRARED PORTION OF THE SPECTRUM, AND THE METALLIC CONTACT LAYERS BETWEEN THE PN JUNCTIONS IMPROVE THE HEAT TRANSFER CONDITIONS AND MAKE IT POSSIBLE TO USE THE GENERATOR AT SUPERHIGH LIGHT FLUX CONCENTRATIONS.

FACILITY: VSESOIUZNYI NAUCHNO-ISSLEDOVATEL'SKII INSTITUT ISTOCHNIKOV TOKA, KISHINEV, MOLDAVIAN SSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC

SVIRSKAYA, P. I., STREBULAYEVA, A. I., TIBANOV, P. V. and BASKAKOV, Yu. A.,
All Union Scientific Research Insitutue of Chemicals for the Protection of Plants

"Hydroxylamine Derivatives with Herbicidic Properties. XLI. Halogenation Reactions of N-Carbamoylhydroxylamine Derivatives

Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6, June 1972, pp 1217-1224

Abstract: Bromination of N-alkyl(aryl)carbamoyl-N-aryl(aklyl)-hydroxylamines with molecular bromine in aprotic inert solvent media produced corresponding n-bromo substituted derivatives. In the case of N-arylcarbomoyl-N-aryl-hydroxylamines the bromine atom attacks, first of all, the ring adjoining the hydroxylamine group. Only in the case of N-alkylhydroxylamines and para substituted N-aryl-hydroxylamines bromination of aryl radical of the carbomoyl group occurs. The structure of bromination products was proven by reverse reaction synthesis and synthesis of derivatives. The IR spectra contain OH and NH bonds which correspond to the appropriately located NOH, NH and CO groups. Bromination of N-allylcarbamoyl-N-arylhydroxylamines involves initially the addition of Br_2 to the double bond and subsequent halogenation of the ring. At 20 - 30° C the reaction is more complex due to simultaneous rearrangement involving the migration of hydroxyl group from the nitrogen to the ring. At lower temperatures the rate of bromination reaction is too low. Bromination of N-allylcarbamoyl-N-aryl-hydroxyamines produces N-2,3-dibromopropylcarbamoyl-N-arylhydroxylamines and

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

Svirskaya, P. I., et al, Zhurnal Organicheskoy Khimii, Vol. VIII, No. 6, June 1972, pp 1212 - 1224

the products of their rearrangement -- N-2,3-dibromopropylcarbamoyl-O-aminophenols. In concentrated hydrochloric acid or in acetone solution saturated with HCl gas N-allylcarbomoyl-N-arylhydroxylamines form N-allyl--N^1-n- or -O-chloroarylurea. Reaction with hydrogen bromide results in the formation of the reduction products: N-allyl-N^1-arylurea.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 018

TITLE--HERBICIDE DERIVATIVES OF HYDROXYLAMINES. XXXII. SYNTHESIS AND REACTIONS OF N,ARYLCARBAMOYL,N,ARYLHYDROXYLAMINES -U-

AUTHOR-(05)-SVIRSKAYA, P.I., BASKAKOV, YU.A., VASILYEV, A.F., TIBANOV, P.V., STREBULAYEVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL ORGANICHESKOY KHIMII, 1970, VOL 6, NR 2, PP 292-300

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, HYDROXYLAMINE, CHEMICAL SYNTHESIS, INSECTICIDE, FUNGICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0366/70/006/002/0292/0300

PROXY REEL/FRAME--3003/1201

CIRC ACCESSION NO--AP0130215

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 018
CIRC ACCESSION NO--AP0130215
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPOUNDS CONTAINING VARIOUS SUBSTITUENTS IN BOTH AROMATIC RINGS WERE PREPARED BY THE REACTION OF ARYLHYDROXYLAMINES WITH ARYL ISOCYANATES X SUBN C SUB6 H SUB5MINUSN NHOH PLUS Y SUBM C SUB6 H SUB5MINUSM NCO YIELDS X SUBN C SUB6 H SUB5MINUSN H(OH)CONHC SUB6 H SUB5MINUSM Y SUBM. COMPOUNDS I WHERE X EQUALS 4,CH SUB3 ARE THE LEAST STABLE AND DECOMPOSE ON SLIGHT HEATING, OR EVEN ON RECRYSTALLIZATION FROM METHYLENE CHLORIDE. THE FREE HYDROXYL GROUP IN COMPOUNDS I CAN BE READILY ACYLATED WITH ACID ANHYDRIDES AND ACYL CHLORIDES TO FORM COMPOUNDS II X SUB N C SUB6 H SUB5MINUSN N9OCOR)CONIIC SUB6 II SUB5MINUSM Y SUBM. COMPOUNDS I AND II ARE PRACTICALLY INACTIVE AS INSECTICIDES, BUT SOME OF THEM ARE SYSTEMIC FUNGICIDES. FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT KHIMICHESKIKH SREDSTV ZASHCHITY RASTENIY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR S UDC 547.435.2+547.238+632.954

SVIRSKAYA, P. I., BASKAKOV, YU. A., VASIL'YEV, A. F., TIBANOV, P. V., and STREBULAYEVA, A. I., All-Union Scientific Research Institute for Chemical Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Herbicidal Derivatives of Hydroxylamines XXXII. Synthesis and Reactions of N-arylcarbamoyl-N-arylhydroxylamines"

Moscow, Zhurnal Organicheskoy Khimii, Vol 6, No 2, Feb 70, pp 292-300

Abstract: The authors synthesized a series of variously substituted N-arylcarbamoyl-N-arylhydroxylamines and their acetates by reacting arylhydroxylamines with arylisocyanates in anhydrous organic solvents. The products were checked for herbicidal activity but were practically inactive. Some exhibited fungicidal activity of the systemic type. The acetates proved to be more stable compounds with high melting points. Studies of IR spectra have shown that in solution these hydroxylamines prefer a trans form; when the concentration is increased the cis form begins to show up. The acetates showed spectra which led to the conclusion that they may have cis-trans conformations not only of the CONH group, but also of aryl and acyl groups.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 666.117.9

ARTAMONOVA, M. V., LITVINOV, A. V., MINAKOV, A. G., MINAKOV, V. A., PAVLUSHKIN, N. M., STREKALOV, A. V., Konstantinovskiy "Order of the Red Banner of Labor" Plant "Avtosteklo"

"A Photochromic Glass"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332059, Division C, filed 26 Jan 70, published 14 Mar 72, pp 85-86

Translation: This Author's Certificate introduces: 1. A photochromic glass containing SiO_2, Al_2O_3, B_2O_3, Li_2O, P_2O_5, CaO and Ag. As a distinguishing feature of the patent, the chemical resistance and mechanical strength of the glass are increased by taking the above-mentioned components in the following proportions (in wt.%):

SiO_2	64-81
Al_2O_3	3-21
B_2O_3	0.1-3.8
Li_2O	8-15
P_2O_5	1-4

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ARTAMONOVA, M. V. et al., USSR Author's Certificate No 332059

	CuO	0.01-0.1
	Ag	0.2-0.7
with the addition of	Na_2O	0.5-3.8
and in excess of 100%	F_2	0.8-2
	Cl	0.5-2.5
	Br	0.3-1.2

2. A modification of this glass distinguished by the fact that the following are added (in wt.%):

Bi_2O_3	0.2-3
InO	0.1-1
PbO	0.01-0.5
CaO	0.5-5
MgO	0.5-5
GeO_2	0.5-6
K_2O	0.5-5.8
Rb_2O	0.5-7.5
MnO	0.01-1.5

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

MOSUNOV, V. N., STREKALOV, L. N.

"Description of Initial Geometry of Information on a Part Based on the Theory of R Functions"

Vopr. Vychisl. i Prikl. mat. [Problems of Computer and Applied Mathematics -- Collection of Works], No 5, Tashkent, 1971, pp 176-179, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V754 by V. Mikheyev).

Translation: A method is suggested for description of the boundaries of a part as a single analytic expression. The essence of the method is that, introducing the binary variable D with the predicate

$$D = S\,[f(x, y, z)] = [f(x, y, z) \geq 0],$$

where f (x, y, z) = 0 is the equation of the elementary surface and defining the logic of construction of the boundary of the part using a certain Boolean function F (D_1, D_2, ..., D_n), where D_1, D_2, ..., D_n are the areas defined by inequalities f_i (x, y, z) $\geq$ 0, the equation for the boundary of the part is

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USSR

MOSUNOV, V. N., STREKALOV, L. N., Vopr. Vychisl. i Prikl. mat., No 5, Tashkent, 1971, pp 176-179.

a certain R function. Areas D_1, D_2, ..., D_n are defined as sets A_i (i = = 1, 2, ..., n), each of which is a piece of a certain elementary surface $\Gamma = \bigcup_{i=1}^{n} A_i$. . A method is presented for definition of each of the sets A_i.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 8.74

MAREYEV, I. V., SOLOMONOV, L. A., STREKALOV, L. N.

"A Data Gathering Control Algorithm"

V sb. Vopr. kibernetiki (Problems of Cybernetics -- collection of works), vyp. 45, Tashkent, 1971, pp 113-119 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V627)

Translation: A study was made of an algorithm for adaptive digitalization permitting data sampling for transmission over a communications channel at the times of arrival of data on an investigated measuring signal significant to the user. The conditions of creating an adaptive digitalization device are analyzed: selection of the system of base functions, procedures for calculating the coefficients, an algorithm for calculating and controlling the error in the correspondence of the transmitted signal to its model. As the base functions, the orthogonal system of Haar polynomials is used which has the property that any continuous function is expanded in a uniformly converging series in the system functions. It is noted that the algorithm obtained significantly improvesthe quality of the adaptive interpolation and noiseproofness of the digitalizer, and it increases the length of the adaptation interval.

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USSR

FOMENKOV, V. N., STREKALOVA, E. Ye., KATOSOVA, L. D., CHIRKOVA, Ye. M., SAL'NIKOVA, L. S., SILANT'YEVA, I. V., YEFIMENKO, L. P., KULAKOV, A. Ye.

"Experimental Data on Adaptation and Its Limits in the Action of Poisons Having a Mutagenic and Embryotropic Action"

Sb. Farmakol, Khimioterapevt. sredstva. Toksikol. Probl. toksikol. (Pharmacology of Chemically Therapeutic Substances. Toxicology. Problems in Toxicology--Collected Works), T. 5 (Itogi nauki i tekhn. VINITI AN SSSR - Results in Science and Technology of the All-Union Institute of Scientific and Technical Information, Academy of Sciences, USSR), 1973, pp 128-145) (from Referativnyy Zhurnal, 30F, Biologicheskaya Khimiya, No 18, 25 September 1973, abstract No 1754)

Translation: The dependence of the development of a cytogenetic and embryotropic effect on long-term exposure was studied in an example of the action of different groups of chemicals: chlorine releasing substances, phenoxyacetic acid esters, triazines, carbamates, expoxy compounds, imines, and others. The possibility of adaptation of animals to some substances that cause pathological changes in offspring was demonstrated.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 669.14

STEKLOVSKIY, M. M., SMIRNOV, Yu. D., CHERNOV, G. I., KATSNEL'SON, Ya. Ye., KHOLODOV, Yu. A., STARIKOVA, A. P., MUKHINA, P. P., and MALYGIN, Yu. D.

"Improvement of Technology and Quality of the 18Kh2N4VA Structural Steel as the Result of Vacuum Tapping"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 241-242

Translation of Abstract: An installation is described which ensures metal tapping under vacuum. The results of an investigation of some technological alternatives for melting and treatment of the 18Kh2N4VA steel are given.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY IN ZIRCONIUM DIOXIDE YTTRIUM OXIDE COPPER (I) OXIDE, ZIRCONIUM DIOXIDE YTTRIUM OXIDE BISMUTH OXIDE,

AUTHOR-(04)-KOTLYAR, A.G., NEUYMIN, A.D., PALGUYEV, S.F., STREKALOVSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 532-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND, COPPER OXIDE, BISMUTH OXIDE, NICKEL, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1825 STEP NO--UR/0363/70/006/003/0532/0536

CIRC ACCESSION NO--AP0118789

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118789

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLUBILITIES OF THE OXIDES OF CU AND BI, AS WELL AS OF METALLIC NI IN A ZRO SUB2 PLUS Y SUB2 O SUB3 MIXT. AT THE RATIO ZRO SUB2:Y SYB2 O SUB3 EQUALS 90:10 ARE VERY INSIGNIFICANT. INTRODUCTION OF CU SUB2 O INTO THE ZRO SUB2-Y SUB2 O SUB3 MIXT. IN AMTS. GREATER THAN 5 MOL. PERCENT IS ACCOMPANIED BY THE APPEARANCE OF ELECTRONIC CONDUCTION CAUSED BY THE COND. OF CU OXIDES ARRANGED ALONG THE BOUNDARIES OF THE RZO SUB2 PLUS Y SUB2 O SUB3 GRAINS IN THE FORM OF THIN FILMS AND FORMING THROUGH BRIDGES AT A RELATIVELY SMALL CONTENT OF THE ADDN. IN (ZRO SUB2 PLUS Y SUB2 O SUB3) PLUS NI MIXTS., THE ELECTRONIC COMPONENT OF THE COND. ENERGIES ONLY AT GREATER THAN 40 WT. PERCENT NI. THE ELEC. COND. OF THE 2 PHASE MIXTS. (SOLID SOLN. OF ZRO SUB2 PLUS Y SUB2 O SUB3 AND NI) THEREBY DEPENDS STRONGLY ON THE FREQUENCY OF THE ELEC. CURRENT THROUGH THE SAMPLE. FACILITY: INST. ELEKTROKHIM., IRKUTSK, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

UDC 666.764.23

USSR

GLUMOV, M. V., NEYUMIN, A. D., PAL'GUYEV, S. F., and STREKALOVSKIY, V. N.

"Influence of Particle Size, Atmosphere, and the Addition of Fe_2O_3 to the Process of Stabilization of Zirconium Dioxide by Yttrium Oxide"

Tr. In-ta Elektrokhimii. Ural'skiy Fil. AN SSSR (Works of the Institute of Electrochemistry. Ural Affiliate, Academy of Sciences USSR), No 12, pp 130-134, 1969 (from Referativnyy Zhurnal--Khimiya, No 2, 1970, Abstract No 2N59)

Translation: The influence of particle size of the initial ZrO_2, annealing atmosphere, the addition of Fe_2O_3, and the method of preparing a mixture of oxides of the composition 0.9 ZrO_2 + 0.1 Y_2O_3 on the formation of cubic solid solutions is investigated. With mechanical means of preparing the mixture with an annealing temperature up to 1500-1600°, sintering and formation of the cubic solid solution is determined to a significant extent by the quality of the initial ZrO_2. With low ZrO_2 activity, introduction to the mixture of 0.9 ZrO_2 + 0.1 Y_2O_3 of Fe_2O_3 additive in a quantity of 2-5 mol.% in an oxidizing or weakly reducing atmosphere makes it possible to accelerate the process of sintering and formation of the solid solution. The sintering temperature and temperature of formation of the cubic solid solution is essentially decreased when the oxide mixture is prepared by precipitation of hydroxides and subsequent decomposition. In the temperature range studied (≤1500°),

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USSR

GURMOV, M. V., et al., Tr. In-ta Elektrokhimii. Ural'skiy Fil. AN SSSR (Works of the Institute of Electrochemistry. Ural Affiliate, Academy of Sciences USSR), No 12, pp 130-134, 1969 (from Referativnyy Zhurnal--Khimiya, No 2, 1970, Abstract No 2 N59)

a strongly reducing CO or H_2 atmosphere has a negative influence on sintering of mixtures of oxides produced mechanically. However, sintering of mixtures produced by coprecipitation of hydroxides is practically insensitive to the gas medium in which the sintering is performed. Eleven biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY STUDIED IN THE ZIRCONIUM DIOXIDE, YTTRIUM SESQUIOXIDE AND TANTALUM PENTOXIDE SYSTEM -U-

AUTHOR-(04)-KOTLYAR, A.G., NEUYMIN, A.D., PALGUYEV, S.F., STREKALOVSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 327-31

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND, TANTALUM COMPOUND, OXIDE, MOLECULAR STRUCTURE, SOLID SOLUTION, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0563 STEP NO--UR/0363/70/006/002/0327/0331

CIRC ACCESSION NO--AP0105548

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE AND ELEC. COND. OF A SERIES OF OXIDE MIXTS. IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM WERE STUDIED AT THE CONST. RATIO OF ZRO SUB2: Y SUB2 O SUB3 EQUALS 90:10, AS WELL AS OF MIXTS. 0.9 (0.9ZRO SUB2 PLUS 0.1Y SUB2 O SUB3) PLUS 0.1NB SUB2 O SUB5 AND 0.9 (0.9ZRO SUB2 PLUS 0.1 Y SUB2 O SUB3) PLUS 0.1V SUB2 O SUB5. SOLID SOLNS. BASED ON ZRO SUB2 FORM IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM. THE STRUCTURE, CONCN. OF O VACANCIES IN THE CRYST. LATTICE, AND ELEC. COND. VARY DEPENDING ON THE RATIO OF THE AMTS. OF Y SUB2 O SUB3 AND TA SUB2 O SUB5 PRESENT IN THE SOLID SOLNS. THE ELEC. COND. OF THE INVESTIGATED SAMPLES OF THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5, ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS NB SUB2 O SUB5, AND ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS V SUB2 O SUB5 SYSTEMS AT A SMALLER THAN OR EQUAL TO 1400DEGREES AND IN O AND AIR IS PURELY IONIC.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 534

STREKIS, A. M.

"Subharmonic Vibrations With a Maximum Amplitude"

V sb. Vopr. dinamiki i prochnosti. Vyp. 23 (Problems of Dynamics and Strength. No. 23 -- Collection of Works), Riga, "Zinatne", 1972, pp 99-104 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8A196)

Translation: The functional dependence between the parameters in an elastic system in which the amplitude of the first harmonic of the subharmonic vibrations is a maximum is found. General equations are given for determining this amplitude and the remaining unknowns of the approximate solution. The equations are solved for two damping coefficients and several values of the dimensionless frequency of the perturbing force. It is shown under what conditions the subharmonic vibrations occur with maximum amplitude, under what conditions they occur with any amplitude, and under what conditions they do not appear at all. Resume.

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USSR

Instrumentation and Equipment

UDC 621.793:620.17.05

KOLOMYTSEV, P. T., IVANOV, YE. G., KALAPIROV, P. D., and STREKOPYTOV, S. A.
Air Force Engineering Academy imeni Zhukovskiy

"Installation for the Investigation of the Plasticity of Diffusion Coatings Applied on Heat-Resistant Alloys"

Moscow, Zavodskaya Laboratoriya, No 5, 1973, pp 618-619

Abstract: The Air Force Engineering Academy imeni Zhukovskiy has developed a unit on which specimens with coatings are tested for bending; after this, the angle of rotation of the section is determined and from its degree the relative elongation at the moment of first crack development is calculated. The plasticity is characterized by the relative elongation $\delta = b\beta/21$, where b and l are thickness and length of the specimen and β = angle of rotation at first crack development. The unit is used for the investigation of the plasticity of protective coatings produced by calorization in a mix of ferroaluminum and ammonium chloride and by chromocalorization in vacuum on specimens of KhN70VMFTYu and KhN55VMTFKYu alloys. As a result of chromocalorization and calorization, layers with maximum Al contents of 14-24 and 30-38%, respectively, develop. It is shown that on

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USSR

KOLOMYTSEV, P. T., et al., Zavodskaya Laboratoriya, No 5, 1973, pp 618-619

specimens of KhN70VMFTYu alloy the increase of Al-content in coatings reduces its plasticity at room temperature. The plasticity of diffusion coatings on chromocalorized specimens of KhN55VMTFKYu alloy with ~24%Al is considerably higher than on calorized specimens with maximum 38%Al in diffusion layers. Two figures.

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USSR

UDC 539.374+669.14.018.44

KOLOMYTSEV, P. T., IVANOV, YE. G., KALAFIROV, P. D., and STREKOPYTOV, S. A., Moscow

"Investigation of the Ductility of Coatings on Heat-Resistant Alloys"

Kiev, Problemy Prochnosti, No 6, 1973, pp 106-107

Abstract: Development of an algorithm is described for investigating the ductility of protective coatings on heat-resistant alloys over a wide temperature interval. Coatings were formed on alloys KhN70VMFTYu (EI826) and KhN55VMFKYu (EI 929) by calorizing in a mixture of ferroaluminum and aluminum chloride as well as chromium calorizing in a vacuum. It was found that when the aluminum content in the coating is increased the ductility properties of the coating are impaired. In calorizing, brittle aluminides NiAl and Ni_2Al_3 are formed whereas in chromium calorizing, aluminides NiAl and the ductile Ni_3Al are formed which imparts some ductility to the coating. 3 figures.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC: 581.143.23.037

STREKOVA, V. Yu. and SPITKOVSKIY, D. M., Institute of Plant Physiology imeni K. A. Timiryazev. Academy of Sciences USSR, and Institute of Medical Genetics, Academy of Medical Sciences USSR

"Analysis of Possible Impairments of Chromosome Structure in a Constant Magnetic Field in a Model of Condensed Submolecular DNP Systems"

Moscow, Fiziologiya Rasteniy, Vol 18, No 1, Jan/Feb 71, pp 192-196

Abstract: The location of moving, charged, free macromolecules of high-molecular-weight changes significantly in powerful magnetic fields. If such molecules are part of a single submolecular system, the theological properties of the system should differ from those in a control. To test this assumption, nuclear nucleoproteins from calf thymus were exposed to a heterogeneous magnetic field of 12,000 oe. A relationship was noted between the nature of the reaction and the protein content of the nucleoprotein complex. At high nitrogen protein ratios (4.6 to 4.9), the relative relaxation of DNP structures was less than in the control (25 and 30.2%, respectively); at low nitrogen/protein ratios (3.7 to 4.2), it was greater than in the control (49.2 and 45.6%, respectively). The diameter of a DNP strand was larger than in the control. It would thus appear that interference with structure formation in the nucleoprotein complex of chromosomes is

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USSR

STREKOVA, V. Yu. and SPITKOVSKIY, D. M., Fiziologiya Rasteniy, Vol 18, No 1, Jan/Feb 71, pp 192-196

one of the possible mechanisms of action of a magnetic field on mitosis. The magnetic field presumably orients the macromolecules and their segments perpendicular to it, i.e., parallel to the axis of the DNP strand, causing it to swell (increasing the diameter).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

STREL'BITSKAYA, A. I.

TECHNICAL TRANSLATION

FSTC-HT-23-516-72

ENGLISH TITLE: Buckling of Plates of Inhomogeneous Material with Elasto-plastic Deformations

FOREIGN TITLE: Izgib Plastin Iz Neodnorodnogo Materiala pri Uprugo-plasticheskikh Deformatsiyakh

AUTHOR: A. I. Strel'bitskaya, V. A. Kolgadin, S. I. Matoshko

SOURCE: *Prikladnaya Mekhanika*
Vol. V, No. 11, 1969, pp 54-61

Translated for FSTC by Leo Kanner Associates

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SPECTROPHOTCMETRIC DETERMINATION OF WATER IN ORGANIC COMPOUNDS BY MEANS OF COBALT CHLORIDE -U-

AUTHOR-(02)-TERENTYEV, V.A., STRELCHIK, B.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 382-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, WATER, COBALT CHLORIDE, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2069 STEP NO--UR/0075/70/025/002/0382/0384

CIRC ACCESSION NO--AP0125656

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2/2 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0125656 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SPECTROPHOTOMETRIC METHOD WAS DEVELOPED FOR THE QUANT. DETN. OF H SUB2 O IN ORG. COMPDS. BY USING COCL SUB2.6H SUB2 O. SPECTRA OF A 2PERCENT COCL SUB2.6H SUB2 O SOLN. IN ISO-PROH IN ITS MIXT. WITH H SUB2 O WERE STUDIED. IN A PURE ALC. THE SOLN. ACQUIRES A DEEP BLUE COLOR WITH AN ABSORBANCE MAX. AT 640 NM. THE INTENSITY OF THE COLOR DECREASES WITH H SUB2 O ADDN. AND AT LAST IT BECOMES PINK COLORED WITH AN ABSORBANCE MAX. AT 520 NM. THE MOLAR ABSORPTIVITY OF THE BLUE COMPD. IS 60 TIMES GREATER THAN OF THE PINK ONE. THE CALIBRATION CURVE PREPD. FROM THE ABSORBANCE AND CONCN. OF COCL SUB2.6H SUB2 O IN ISO-PROH IS A STRAIGHT LINE. WITH 2PERCENT ALC. COCL SUB2. 6H SUB2 O AT A RATIO SALT ANALYZED SOLN. OF 24:1, 0-100PERCENT H SUB2 O CAN BE DETD., WHILE WHEN THE RATIO SALT ANALYZED SOLN. IS 12:1 ONLY UP TO 60PERCENT H SUB2 O CAN BE DETD. CALIBRATION CURVES FOR H SUB2 O DETN. COMPLETELY MERGE FOR SOLVENTS, SUCH AS ALCS., ME SUB2 CO, ACOH AND THEIR MIXTS. FACILITY: SCI.-RES. INST. SYN. ALC., NOVOKUIBYSHEVSK, USSR.

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USSR

UDC: 621.378.329

BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. M., LEBEDEV, V. V., NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of the Cavity in a Semiconductor Laser With Electron-Beam Pumping"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 61-68

Abstract: A method is described for creating a cavity with waveguide structure in a semiconductor laser with electron-beam pumping. It is shown that waveguide modes are stimulated in such a cavity, with the result that the emission threshold is independent of the energy of the electrons, and the radiation pattern has a structure which is more complex than in a uniform cavity. This type of cavity reduces the emission threshold to 0.3 A/cm^2 (in the 15-20 keV electron energy region), which is 1-2 orders of magnitude lower than in a cavity of homogeneous structure. Five illustrations, four tables, bibliography of nine titles.

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STREL'CHENKO S.S.

JPRS 57208

6.7.73

4

"II-3 EFFECT OF SOME GAS DYNAMIC FACTORS IN THE SOURCE ZONE ON THE GROWTH PROCESS OF EPITAXIAL LAYERS OF GALLIUM ARSENIDE IN THE CHLORIDE SYSTEM

[Article by A. A. Matrosh, O. B. Lur'kina, S. S. Strel'chenko, V. V. Lebedev, Kaluga; Novoye Bliznetsy, III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 92]

The growth of epitaxial layers of gallium arsenide in a chloride flow system [Ga + AsCl$_3$ + H$_2$] is determined to a significant degree by the processes taking place in the source zone.

Under the assumption that the mass delivery of the components of the vapor-gas mixture to the surface of the source takes place as a result of molecular diffusion, a quantitative calculation was made of the degree of completeness of the interaction of the vapor-gas flow in a broad range of variation of its linear velocities. The experimental results obtained satisfactorily coincided with the calculated results.

The equations of thermodynamic equilibrium in the source zone were compiled and calculated on a computer taking into account the degree of completeness of the interaction [8]. The partial pressures of the components of the vapor-gas mixture were calculated in a broad temperature range for β = 0.1, 0.2, 0.3, ... 0.9, 1.

A study was made of the effect of the degree of completeness of the interaction on the composition of the gas phase in the crystallization zone and the growth rate of the epitaxial layers.

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JPRS 59008
6-72

STREL'CHENKO, S.S.

II-10. THERMODYNAMIC ANALYSIS OF EQUILIBRIUM IN THE Ge-H-Cl SYSTEM

[Article by G. G. Aleksov, V. L. Nakhimov, V. G. Komshilin, S. S. Strel'chenko, Kaluga; Novosibirsk, III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972 p 20]

On the basis of the thermodynamic calculation, the composition of the gas phase was determined for various temperatures and ratios in the input flow for the equilibrium two-phase system comprising solid germanium and the gas phase.

It was demonstrated that in the temperature range of 700-850°C most frequently used to grow epitaxial layers of germanium from the gas phase, the basic equilibrium particles are H_2; HCl; $GeHCl_3$; $GeCl_2$.

The germanium yield was defined as a function of the temperature of the process and the composition of the input vapor-gas mixture. The conditions of introduction of the growth process of the epitaxial Ge layers were recommended.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

SPRS 59208 6/73

STREL'CHENKO, S. S.

XV-5 APPLICATION OF THE METHOD OF SECONDARY ION-ION EMISSION TO STUDY THE SURFACE OF $A^{III}B^{V}$ SEMICONDUCTOR COMPOUNDS

[Article by V. V. Bakov, A. G. Koval', Yu. A. Kilimovskiy, V. P. Lelekov, S. S. Strel'chenko, and V. V. Muratov, Khar'kov-Kaluga; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 210]

The use of the method of secondary ion-ion emission is discussed in this paper to study the surface of $A^{III}B^{V}$ semiconductor compounds. This method was used successfully previously [1] to study the surface reactions on the atomic level.

The research performed demonstrated that the mass spectrum of the secondary gallium arsenide ions contains two groups of particles: 1) those knocked out of the adsorbed layer and 2) those knocked out of the gallium arsenide lattice.

In the first group ions of the $Ga_nO_m^+$, Ga_nOH^+ and Ga_nAsO^+ type were observed the origin of which is related to the surface contamination. The study of the temperature dependence of these ions demonstrated that the gallium arsenide surface is cleaned in a vacuum of 10^{-7} mm Hg at a temperature of 500° C.

In the second group of particles, ions of the $Ga_nAs_m^+$ type were observed. In this paper there is a discussion of possible mechanisms of their occurrence connected with the characteristic features of the chemical bond in gallium arsenide.

A study was made of certain aspects of the application of the method of secondary ion-ion emission to the study of the processes of the formation of nucleating centers for growth of heteroepitaxial layers.

BIBLIOGRAPHY

1. Ya. M. Fogel', UFN [Progress in the Physical Science], No 91, 1973, 1967.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 621.375.82

BOGDANKEVICH, O. V., BORISOV, N. A., LAVRUSHIN, B. M., LEBEDEV, V. V., NEGODOV, A. G., STREL'CHENKO, S. S.

"Waveguide Structure of a Resonator in a Semiconductor Laser With Electron Beam Pumping"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 61-68 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D999)

Translation: A method is described for developing a waveguide structure of a resonator in a semiconductor laser with electron beam pumping. It is shown that modes of a waveguide type are excited in such a resonator, as a result of which the oscillation threshold is independent of the electron energy and the directional diagram has a more complex structure than in a homogeneous resonator. Use of the resonator makes possible a reduction in the oscillation threshold to 0.3 a/cm^2 (in the electron energy range of 15-20 kev), which is less than in a laser with a homogeneous resonator by a factor of 1-2. 9 ref. Authors abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/3 024 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MAN AND HIS WORK: ON THE EVE. ABOUT YOUNG SPECIALISTS AND HOW THEY SET OUT ON THE ROAD OF WORK -U-

AUTHOR--STRELCHUK, N.

COUNTRY OF INFO--USSR

SOURCE--ZVESTOA. MAY 22. P. 3.

DATE PUBLISHED--22MAY70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--STUDENT PLACEMENT, R AND D MANPOWER PLANNING, ECONOMIC PLANNING ORGANIZATION, ENGINEER TECHNICIAN RATIO, PERSONNEL MANAGEMENT, MINISTERIAL CONTROL, GOVERNMENT ECONOMIC PLANNING, MAIN ADMINISTRATION, R AND D POLICY MAKING POWER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0843 STEP NO--UR/9003/70/000/000/0003/0003

CIRC ACCESSION NO--AN0122889

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2/3 024 UNCLASSIFIED

CIRC ACCESSION NO--AN0122889 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE WAS A CONFERENCE RECENTLY IN OUR INSTITUTE. CALLED BY THE U.S.S.R. MINISTRY OF [illegible] AND SPECIALIZED SECONDARY EDUCATION, IT WAS CONCERNED WITH [illegible] ASSIGNMENTS FOR YOUNG SPEDIALISTS. THE MINISTRY IS MOST UNHAPPY AT THE GENERAL SITUATION WITH RESPECT TO WORK ASSIGNMENTS FOR INSTITUTE GRADUATES BUT ESPECIALLY SO WITH THE PLACEMENT OF GRADUATES OF THE HIGHER CONSTRUCTION SPECILTIES INSTITUTIONS. THE PRECIPITOUSLY GROWING SCALE AND RISING PACE OF CONSTRUCTION HAS RESULTED IN A CONTINUAL SHORTAGE OF CADRES IN THE BRANCH. DEFICITS EXIST IN ALL THE CONSTRUCTION SPECIALTIES. THE HIGHER SCHOOLS AND TECHNICUMS ARE NOT SATISFYING THE NEEDS OF THE NATIONAL ECONOMY: DEMAND OUTSTRIPS SUPPLY BY ABOUBT THREE TIMES. THE SITUATION IS MADE WORSE BY THE INCORRECT WAY IN WHICH THE PLANNING OF CADRE TRAINING IS DONE. AN ORDER FOR THE NUMBER OF TECHNICIANS, ENGINEERS, ETC., IT NEEDS IS PLACED BY AN INSTITUTION, PLANT, CONSTRUCTION AND INSTALLATION ADMINISTRATION OR SOME OTHER SUCH ORGANIZATION. THE TRUST FORWARDS THE ORDER TO THE CHIEF ADMINISTRATION, THE CHIEF ADMINISTRATION TO THE MINISTRY. THE MINISTRY COLLATES THE REQUESTS AND SENDS THEM FIRST TO THE REPUBLIC STATE PLANNING COMMITTEE AND THEN TO THE ALL UNION STATE PLANNING COMMITTEE. THE PLAN FOR CADRE TRAINING IS DRAWN UP ON THIS BASIS. IS THIS THE RIGHT WAY? NOT QUITE, IN MY OPINION. BECAUSE THE DIRECTOR OF A CONSTRUCTION ADMINISTRATION KNOWS THERE IS A SHORTAGE OF CADRES AND THAT HE NEED NOT, IN PRACTICE, ANSWER FOR THE EXACTNESS AND DEPENDABILITY OF HIS ORDER, HE ACTS ON A PRINCIPLE OF REQUESTING MORE ENGINEERS AND FEWER TECHNICIANS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

3/3 024 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AN0122889
ABSTRACT/EXTRACT--TECHNICIANS ARE REQUESTED FOR SLOTS THAT COULD BE FILLED WITH SKILLED WORKERS AND ENGINEERS ARE SLATED WHERE TECHNICIANS WOULD DO. THE NORMAL RATIO OF ENGINEERS TO TECHNICIANS IS UPSET: THERE IS ONE TECHNICIAN FOR EACH ENGINEER IN CONSTRUCTION TODAY, WHEN WE NEED THREE OR FOUR, POSSIBLY FIVE, TECHNICIANS TO ONE ENGINEER. THERE ARE STILL NO EXACT CRITERIA TO INDICATE WHAT IS ENGINEER'S WORK AND WHAT IS TECHNICIAN'S. BUT A SCIENTIFIC FORMULATION OF CRITERIA OF THIS KIND WOULD ASSIST IN A MORE OBJECTIVE DETERMINATION OF THE NEED FOR SPECIALSITS AND AVOID DEPENDENCE ON THE SUBJECTIVE NOTIONS OF EXECUTIVES OF ENTERPRISES AND PERSONNEL SPECIALISTS. WE MUST CREATE FOR THE YOUNG SPECIALIST ALL THE CONDITIONS HE NEEDS, NOT ONLY FOR FRUITFUL WORK IN HIS SPECIALTY, BUT FOR HIS LIFE AS A WHOLE. YET MINISTRIES AND THEIR ENTERPRISES OFTEN FAIL TO MEET THESE LEGITIMATE DEMANDS. HERE IS OUR POLICY ON THE MATTER: IF A MINISTRY DOES NOT CREATE THE PROPER CONDITIONS FOR THE GRADUATES OF HIGHER EDUCATIONAL INSTITUTIONS, WE SHALL NOT SEND IT SPECIALISTS. WE CANNOT DO OTHERWISE IF WE ARE TO ACHIEVE A HIGH RETURN FROM THE YOUNG ENGINEER. FACILITY: MOSCOW BUILDING ENGINEERING INSTITUTE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

STRELCHUK, N. A., KHESIN, G. L., KOSTIN, I. KH., SHPYAKIN, V. N., MARSHAK, YU. I.

"Studies of Stresses in Tunnels by the Polarization Optical Method and Under Natural Conditions Under the Effect of an Explosive Load"

Sb. tr. Mosk. inzh. stroit. in-t (Collected Works of the Moscow Construction Engineering Institute), 1970, No 73, pp 53-63 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11V834)

Translation: The stressed state of the hydrotechnical tunnels of the Toktogul GES [Hydroelectric Power Plant] and the Almaata siltproof dam occurring when exploding charges during their construction was investigated in two-dimensional models. The scales of geometric similarity were (2.5-6)·10³. The complex shape of the day surface led to multiple application of the incident and reflected waves. The stresses in the outline of the tunnels were determined by pictures of the interference bands from the condition of similarity of the wave field in nature and in the model using known theoretical and empirical relations.

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USSR

STRELCHUK, N. A., et al, Sb. tr. Mosk. inzh. stroit. in-t, 1970, No 73, pp 53-63

The problem was solved under the assumption of elasticity anisotropy of the material in nature (limestone) and the modol (ED5-MTGFA). For the characteristic times corresponding to the effect of different waves in the tunnel, stress-strain diagrams of the expected maximum outline stresses are presented. A comparison of the results obtained using the model and natural measurements is presented for the Alma-Ata Dam. The bibliography has 9 entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 669.721.008

STRELETS, Kh. K.

"Main Trends in Technical Progress of the Magnesium Industry of the USSR"

Tr. Vses. N-i Proyektn. In-ta. Alyumin., Magn. i Elektroden. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, , No. 72, pp. 11-17. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G186 by the author).

Translation: A brief review is presented of the technical development of the magnesium industry in the USSR up to 1969, and the scientific and technical developments upon which further technical progress in this area of metallurgy must be based are studied. Results are presented from development of the versions of technological plans for production of anhydrous $MgCl_2$ from its aqueous solutions. A review is made of new designs of magnesium electrolyzers and of a new, highly mechanized continuous flow electrolysis plan. The introduction of these developments to industry will cause a rapid increase in the technical level of the magnesium industry and will allow the cost of Mg to be reduced by about 30%, sharply increasing productivity and basically improving the conditions of labor.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 661.357.721

STRELETS, Kh. L.

"Electrolytic Production of Magnesium"

Elektroliticheskoye Polucheniye Magniya [English Version Above], Moscow, Metallurgiya Press, 1972, 363 pages.

Translation of Annotation: This book presents characteristics of raw materials used for production of magnesium by electrolysis; the theoretical principles of processes of dehydration of magnesium chloride and electrolysis are studied, as well as the technologies of these processes; the properties of magnesium and methods of refining magnesium raw materials are described, and brief information is presented on magnesium alloys and areas of their application.

The book is designed for engineering-technical and scientific workers, as well as students in universities, specializing in the area of the metallurgy of magnesium. 157 Figures; 182 Tables; 261 Biblio. Refs.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 661.357.721

STRELETS, Kh. L. , Elektroliticheskoye Polucheniye Magniya, Moscow, Metallurgiya Press, 1972, 363 pages.

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USSR

STRELETS, Kh. L. , Elektroliticheskoye Polucheniye Magniya, Moscow, Metallurgiya Press, 1972, 363 pages.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 661.357.721

STRELETS, Kh. L. , Elektroliticheskoye Polucheniye Magniya, Moscow, Metallurgiya Press, 1972, 363 pages.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR UDC 661.357.721

STRELETS, Kh. L. , Elektroliticheskoye Polucheniye Magniya, Moscow, Metallurgiya Press, 1972, 363 pages.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR UDC 661.357.721

STRELETS, Kh. L. , Elektroliticheskoye Polucheniye Magniya, Moscow, Metallurgiya Press, 1972, 363 pages.

3. Influence of Distance Between Electrodes, Height of Anode and Current Density on Yield Per Current when Electrolyzer is Fed with Magnesium Chloride 282
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR UDC 661.357.721

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 669.721.472

STRELETS, Kh. L., DEVYATKIN, V. N., TATAKIN, A. N., CHESNOKOV, A. S., CHISTYAKOVA, V. S., MEDVETSKAYA, G. A., BONDARENKO, N. V.

"Development of Designs of Diaphragmless Magnesium Electrolyzers"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 41-47. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G195 by the authors).

Translation: Results are presented from testing of pilot-scale diaphragmless electrolyzers (DE) with upper and lower input of anodes. The DE allow the specific consumption of electric power to be decreased by about 1500 kw·hr/t Mg, increasing the specific removal of Mg by 30-35% and decreasing the losses of Cl in the exhaust gases. The results of testing indicated that DE with lower position of the anodes should be introduced at two plants. 2 figs; 2 tables, 6 biblio refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 669.721.472

TSYPLAKOVA, M. M., STRELETS, Kh. L.

"Electrolytic Separation of Magnesium With Liquid Aluminum Cathode"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 119-122. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G198 by the authors).

Translation: The influence of certain technological parameters on the yield per current during electrolysis of $MgCl_2$ with a liquid Al cathode is studied. Electrolytic production of Mg occurs with high yields per current (99%). A decisive role is phyed in the separation of Mg on the liquid Al cathode by diffusion of Mg in the cathode alloy. Forced mixing of the cathode alloy significantly increases the yield per current, simultaneously decreasing the back emf by 0.3-0.4 v. For example, at 700° with D_k=2.5 a/cm^2 in experiments without mixing, the yield per current was 91.5%, while in experiments with mixing of the cathode Mg, it reached 99.3%. 4 tables.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

UDC 533.6.011.55

STRELETS, M. KH.

"Turbulent Boundary Layer on a Cone in a Supersonic Flow in the Presence of Introduction of a Foreign Substance"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamics), No 313, 1970, pp 90-91

Translation: A rule is presented for recalculating the local coefficient of surface friction for a plate with introduction of a substance into the corresponding coefficient for a cone in a supersonic flow with a zero angle of attack. It is demonstrated that the rule obtained by Van Drist in the absence of introduction of a substance into the boundary layer is also retained in the investigated case. The bibliography has 2 entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CONCERNING THE STRUCTURE OF FUNCTIONAL CONNECTIONS IN EVOKED ELECTRIC ACTIVITY OF THE PARIETAL AND OCCIPITAL BRAIN AREAS IN NORMALS
AUTHOR-(02)-MONAKHOV, K.K., STRELETS, V.B.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 6, PP 864-870
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, BIOPOTENTIAL, SCHIZOPHRENIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0236 STEP NO--UR/0246/70/070/006/0864/0870

CIRC ACCESSION NO--AP0126015
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126015

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT OF A STUDY CONCERNING COMPARATIVE INVESTIGATIONS OF NORMALS AND SCHIZOPHRENIC MALE PATIENTS FROM THE AGE OF 20-40. THE REGISTRATION OF ELECTRIC ACITVITY OF PARIETAL AND OCCIPITAL BRAIN AREAS WAS CONDUCTED BY THE METHOD OF SUPERPOSITION BY PHOTO STIMULATION. THE RESULTS WERE PROCESSED BY A COMPUTER ACCORDING TO A PROGRAM OF MUTUAL CORRELATIONS OF INSTANT SIGNIFICANCE OF BIOPOTENTIALS FROM 2 AREAS. COMPARING THE COEFFICIENTS OF CORRELATIONS WITH THE MORPHOLOGY OF THE ELECTRIC CURVES OF THESE AREAS IN NORMALS IT WAS DISPLAYED THAT THE HIGHEST CORRELATION OF INSTANT SIGNIFICANCES OF THE BIOPOTENTIALS COINCIDES WITH THE PHASE OF DEVELOPMENT OF THE FIRST NEGATIVE, POSITIVE AND THE SECOND NEGATIVE WAVE. THE COEFFICIENT WAS LESS ON THE APEX AND FALL OF THE WAVE. ON THE BASIS OF ACHIEVED RESULTS THE AUTHORS PRESUME THAT THERE MAY EXIST A SPECIFIC PROGRAM IN THE DEVELOPMENT OF ELECTRIC RESPONSES, EXERTING A SUCCESSIONAL INVOLVEMENT OF DIFFERENT FUNCTIONAL STRUCTURES, WHICH FORM THE RESPONSE. IN SCHIZOPHRENIC PATIENTS WITH DIFFERENT FORMS THE PROGRAM IN THE DEVELOPMENT OF THE EVOKED RESPONSE IS DISTORTED. THE AUTHORS BELIEVE THAT THIS IS A REFLECTION OF THE DISORDERS IN THE INTEGRATIVE ACTIVITY OF THE BRAIN IN GENERAL IN SCHIZOPHRENIC PATIENTS. THE CONVENED THERAPY IN SUCH CASES DID NOT BRING ON A NORMALIZATION OF THESE PROCESSES. FACILITY: INSTITUT PSIKHIATRII AMN SSSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

Instruments and Equipment

UDC 615.471:612.886-088.7

USSR

VLASOV, A. I., LEBEDEV, I. G., STRELETSKAYA, R. A., and MOSEYEV, S. N., Clinic of Ear, Nose and Throat Diseases, Izhevsk Medical Institute

"An Electrically Powered Rotating Chair for Recording Some Motor and Automatic Responses of the Vestibular Analysor"

Moscow, Vestnik Otorinolaringologii, No 6, 1972, pp 75-77

Abstract: A Baranyi chair is connected to a 3-phase 2-speed a.c. electric motor (120 v, 3000 and 1500 rpm) with a reducer to permit the chair to rotate at 30 and 15 rpm and correspondingly slower acceleration and deceleration. Four switches are used to change the direction and rate of rotation. A set of silvered rotating contact rings is used as a collector ring along with silvered contact clips to reduce the distortion of the signals. On the back of the chair is a terminal block with cells for the electrodes and a graduated arc to determine the deviation. The apparatus can be used for continuous, simultaneous recording of up to 20 different somatic and autonomic reactions, including spontaneous and induced nystagmus in the vertical and horizontal planes, position and optokinetic nystagmus along with the pulse, EEG, EKG, and respiration. Schematics and a photograph of the chair are included.

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UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 036

TITLE--LUMINESCENE ACCOMPANYING MECHANICAL DEFORMATION AND FAILURE OF POLYMERS -U-

AUTHOR-(05)-BUTYAGIN, P.YU., YEROFEYEV, V.S., MUSAYELYAN, I.N., PATRIKEYEV, G.A., STRELETSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2), 290-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENE, MECHANICAL FAILURE, ELONGATION, POLYMER, POLYTETRAFLUOROETHYLENE, POLYETHYLENE TEREPHTHALATE, PLASTIC FILM, POLYETHYLENE, PROPYLENE, POLYVINYL CHLORIDE, NATURAL RUBBER, VULCANIZATE, POLYMETHYLMETHACRYLATE, THERMAL DEGRADATION, POLYMER DEGRADATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0459/70/012/002/0290/0299

PROXY REEL/FRAME--1995/1224

CIRC ACCESSION NO--AP0116686 UNCLASSIFIED

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2/2 036 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116686

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LUMINESCENE OCCURRING DURING CONTRACTION, ELONGATION, AND FAILURE OF POLYMERS WAS STUDIED ON A SNK-7 IKHF APP. EQUIPPED WITH PHOTOMULTIPLIERS FEU-29 (LAMBDA SUBMAX EQUALS 400 PLUS OR MINUS 40 MMU), FEU-13 (LAMBDA SUBMAX EQUALS 410 PLUS OR MINUS 10 MMU), AND FEU-22 (LAMBDA SUBMAX EQUALS 750 PLUS OR MINUS 100 MMU). A CROSS SECTIONAL DIAGRAM OF THE APP. AND ITS MODE OF OPERATION ARE PRESENTED. THE MOST INTENSIVE LUMINESCENE DURING FAILURE WAS OBSD. IN POLY (TETRAFLUOROETHYLENE) FP-4 (I) AND POLY(ETHYLENE TEREPHTHALATE) (II) FILMS; THE LEAST LUMINESCENT POLYMERS WERE HIGH PRESSURE POLYETHYLENE, ETHYLENE PROPYLENE COPOLYMER (III), ETHYLENE ALPHA BUTYLENE COPLYMER, POLY(VINYL CHLORIDE), POLYPROPYLENE, AND NATURAL RUBBER (IV) VULCANIZATES. FAILURE OR SUDDEN CONTRACTION IN I-IV FILMS WAS ACCOMPANIED BY POST LUMINESCENE, (GREATER THAN OR EQUAL TO 15 MIN). THE LUMINESCENE INTENSITY WAS LOW IN ALL CASES AND EXCEEDED THE SENSITIVITY THRESHOLD OF THE PHOTOMULTIPLIERS ONLY BY A FACTOR OF 10 PRIME2-10 PRIME3. A HYPOTHESIS WAS ADVANCED TO ACCOUNT FOR THE LUMINESCENCE. STUDY OF THERMAL LUNINESCENCE OF POWD. POLYMERS SUGGESTED THAT LUMINESCENCE IN POLY (ME METHACRYLATE) AND POLYSTYRENE AT 270-330DEGREESK WAS DUE TO RECOMBINATION OF PEROXIDE RADICALS FORMED DURING MECH. SCISSION OF MACROMOLS., WHEREAS INTENSIVE LUMINESCENCE ABOVE 330DEGREESK WAS DUE TO OXIDATIVE THERMAL DEGRADATION INITIATED BY DECOMPD. HYDROPEROXIDES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 043 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--STRESS RUPTURE SHEAR STRENGTH OF FIBERGLASS REINFORCED PLASTICS -U-

AUTHOR-(02)-STRELIAYEV, V.S., KONSTANTINOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--MEKHANIKA POLIMEROV, VOL. 6, MAR.-APR. 1970, P. 295-302.

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SHEAR STRENGTH, RUPTURE STRENGTH, FIBERGLASS, REINFORCED PLASTIC, STRESS LOAD, CYCLIC LOAD TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2103 STEP NO--UR/0374/70/006/000/0295/0302

CIRC ACCESSION NO--AP0125687

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 043 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE TIME DEPENDENCES OF THE SHEAR STRENGTH OF FIBERGLASS REINFORCED PLASTICS SUBJECTED TO MONOTONIC, PROLONGED, AND CYCLIC LOADING. RUPTURE DURING MONOTONIC AND PROLONGED LOADING IS DESCRIBED WITH THE AID OF A POWER LAW MODEL OF DAMAGE ACCUMULATION. IT IS SHOWN THAT THE SHARPEST DECREASE IN STRENGTH OCCURS IN THE CASE OF CYCLIC LOADING. ON THE BASIS OF A STATISTICAL TREATMENT OF THE EXPERIMENTAL RESULTS, IT IS DEMONSTRATED THAT THE TIME DEPENDENCES MAY BE SATISFACTORILY DESCRIBED BY EITHER POWER LAW OR EXPONENTIAL EQUATIONS. FACILITY: MOSKOVSKII AVIATSIONNYI TEKHNOLOGICHESKII INSTITUT, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

DEGUTIS, J.; STRELICAS, Š. (Vilnius State University)

"Existence of Eigenvalues for a Differential Operator Depending on a Parameter"

Vilnius, Litovskiy Matematicheskiy Sbornik; July-September, 1971; pp 535-55

Abstract: This paper is concerned with the existence of the eigenvalues for the system of equations

$$\left.\begin{aligned} &y^{(n)}+\sum_{j=0}^{m_1}\lambda^j p_j^{(1)}(x)\,y^{(n-1)}+\sum_{j=0}^{m_2}\lambda^j p_j^{(2)}(x)\,y^{(n-2)}+\ldots+\sum_{j=0}^{m_n}\lambda^j p_j^{(n)}(x)\,y=0,\\ &y^{(j)}(0)=0,\quad j=0,\ 1,\ \ldots,\ n-2,\\ &y^{(k)}(a)=0,\quad n-1>k=const. \end{aligned}\right\} \quad (1)$$

In the work the following statement is proved.

Theorem. Suppose the functions $(-1)^{m_k} p_{m_k}^{(k)}(x)$, $k=1,2,\ldots,n$ are continuous and positive and $p_j^{(k)}(x)$, $j=0,1,\ldots,m_k-1$; $k=1,2,\ldots,n$, are continuous in the interval $[0,a]$. Let us denote $\rho=\max\limits_{1<j\leq n}\left\{\frac{m_j}{j}\right\}$.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

USSR

DEGUTIS, J., STRELICAS, S., Litovskiy Matematicheskiy Sbornik, July-September 1971, pp 535-555

If ρ is not an integer, there exists an infinite sequence of eigenvalues $\{\lambda_j\}$ of problem (1), the index of convergence being ρ.

Besides,

$$cp^{\frac{1}{\rho}} < |\lambda_p| < Cp^{\frac{1}{\rho}},$$

where $C > c > 0$ are constants independent of p.

If ρ is an integer, we can find a differential operator of type (1) which has no eigenvalue.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A USEFUL MONOGRAPH -U-

AUTHOR--STRELIN, G.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, JULY 18, 1970, P 3, COLS 6-7

DATE PUBLISHED--28JUL70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC TRANSPLANT, RADIATION BIOLOGIC EFFECT, IMMUNOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0916 STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0122960

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0122960

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE REVIEWS A BOOK, THE "RADIATION IMMUNOLOGY AND TRANSPLANTATION", BY R. V. PETROV AND YU. M. ZARETSKIY, PUBLISHED RECENTLY BY THE ATOMIZDAT, MOSCOW, 1970, 543 P.

FACILITY: ACADEMY OF MEDICAL SCIENCES.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210008-3

Radiobiology

UDC 577.391:615.771.8

USSR

STEKLIN, G. S., SHMIDT, N. K., and RUDAKOV, I. A., Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Institute of Medical Radiology, Academy of Medical Sciences USSR

"Postirradiation Restoration of Hemopoiesis Through Transplantation of Autologous Bone Marrow"

Moscow, Uspekhi Sovremennoy Biologii, Vol 72, Vyp 3(6), 1971, pp 375-390

Abstract: Literature on experimental methods of treating the radiation sickness by transplanting compatible bone marrow tissue is reviewed, with 146 references cited. Emphasis is placed on two methods: 1) removing and preserving a certain quantity of the bone marrow prior to irradiation and reimplanting it into the donor after irradiation and 2) utilizing bone marrow from areas which happened to be protected during exposure to radiation and infusing them into the patient's circulation to speed up the natural process of dissemination of healthy bone marrow cells. The role of the various bone marrow cells, especially the stem cells, in the development of and recovery from radiation sickness is discussed.

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Acc. Nr: AP0034216

Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code: UR0078

S

71262j Synthesis, stability, and characteristics of the acid properties of tetra- and triacetoxime compounds of platinum(II). Stetsenko, A. I.; Strelin, S. G.; Gel'fman, M. I. (USSR). *Zh. Neorg. Khim.* 1970, 15(1), 134-8 (Russ). Aq. soln. of $[Pt(HAox)_3Cl]Cl$ was treated with $AgNO_3$, the AgCl was filtered off, and acetoxime (HAox) was added to the filtrate. Heavy white ppt., $[Pt(HAox)_2(Aox)_2]$ (I), formed when the soln. was cooled in ice bath. $[Pt(HAox)_4]Cl_2$ (II) formed when I was treated with HCl. Instability const. (β) of II, given as log β^{-1} is 29.1 ± 0.4 (at 18° and ionic strength = 0.1). HMJR

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UDC 617-001.28-085.849.1.015.25-07:616.
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STRELINA, A. V., Central Scientific Research Roentgenology and Radiology Institute, Ministry of Health, USSR, Leningrad

"The Activity of Cytochrome Oxidase in the Epithelium of Jejunum Villi in Mice During Radiation Sickness and the Radioprotective Effect of Cyanide"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1970, pp 33-36

Abstract: Whole body X-ray irradiation of white mice in a dose of 600 r ($LD_{63/30}$) inhibited the activity of cytochrome oxidase in the epithelium of jejunum villi, coinciding with "intestinal death." In about 15 days activity was restored in surviving animals. Administration of sodium cyanide -- an inhibitor of cytochrome oxidase -- before irradiation, first caused drastically depressed enzymatic activity, which was normalized, however, much faster than in controls. It was postulated that the protective effect of cyanide is due to the formation of an inactive complex CN-cytochrome oxidase, which upon dissociation produces the necessary energy for recovery processes. Cysteine may have analogous radioprotective action.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON ALBINO MICE SUBJECTED TO WHOLE BODY X RAY IRRADIATION IN A DOSE OF 600 R THE AUTHOR SHOWS REGULAR CHANGES IN THE ACTIVITY OF CYTOCHROMOXIDASE REFLECTING THE INTEGRAL RATIOS OF THE PRINCIPAL ENERGY REPRODUCING SYSTEMS. IN THE EPITHELIAL CELLS OF VILLI OF THE JEJUNUM THE MOST SIGNIFICANT INHIBITION OF THE REFERRED TO ENZYMATIC ACTIVITY COINCIDES WITH THE PEAK OF INTESTINAL DEATH; RESTORATION OF THE ACTIVITY IS ACHIEVED IN 15 DAYS. A PRINCIPALLY OTHER DYNAMICS OF ALTERATIONS OF CYTOCHROMOXIDASE IS OBSERVED IF PRIOR TO IRRADIATION ONE ADMINISTERS SODIUM CYANIDE, WHICH CAUSED A SHARP INHIBITION OF THE ENZYMATIC ACTIVITY AT THE TIME OF IRRADIATION AND A RELATIVELY RAPID RESTORATION IN 4 DAYS. IN THE AUTHOR'S OPINION RADIOPROTECTION WITH CYANIDE IS CAUSED BY THE FORMATION OF AN INACTIVE COMPLEX OF CYTOCHROMOXIDASE CN CONDICIVE TO AN INCREASE OF RADIORESISTANCE OF THE CHAIN OF ELECTRON TRANSFER AND, IN THIS CONNECTION, THE SURVIVAL OF ANIMALS.

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USSR

LINNIK, Yu. V., RUKHIN, A. L., and STRELITS, Sh. I.

"Gamma Distribution and Partial Sufficiency of Polynomials"

Leningrad, Trudy Matematicheskogo Instituta im. Steklova; CXI: Teoreticheskiye Zadachi Matematicheskoy Statistiki, 1970, pp 40-51

Abstract: The article concerns repeated samplings of a given population of positive random quantities and the properties of partial sufficiency of linear statistics with respect to polynomials in percentages (in particular, properties of the stability of regression) and certain other statistics. The authors derive nonlinear differential equations which are studied by means of new results of Sh. I. Strelits on the asymptotic behavior of solutions of nonlinear differential equations. A new characterization of gamma distributions is obtained on the basis of this method.

The following theorem is proven:

"Let $F^{n*}(x)$ be the nth power of the convolution $F(x)$, absolutely continuous, and $\int_0^\infty x^k dF(x) < \infty$. Further, let $E_\sigma\left\{P_k\left(\frac{x_1}{\Sigma x_j}, \ldots, \frac{x_n}{\Sigma x_j}\right) \middle| \sum_1^n x_j\right\}$ not depend on σ

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LINNIK, Yu. V., et al, Trudy Matematicheskogo Instituta im. Steklova; CXI: Teoreticheskiye Zadachi Matematicheskoy Statistiki, 1970, pp 40-51

for some polynomial P_k of power $k < n$, such that the condition

$$F'(x) = A_0 x^{\rho-1} + A_1 x^{\rho} + \ldots + (A_8 + 0^{(1)}) \quad \text{[remainder illegible]}$$
(1)

is satisfied. If at least one of the following conditions is satisfied, then F(x) is a distribution function of the gamma distribution:

(a) the function $z^{-\rho} + z^{-\rho-1}$, — where ρ is defined in equation (1) -- is not a solution of the equation

$$\sum_{p=1}^{k} \sum_{i_1+\ldots+i_p=k} A_{i_1,\ldots,i_p} y^{(i_1)} \ldots y^{(i_p)} y^{k-p} = 0, \quad n > k > 2, \qquad (2)$$

and the equation

$$\sum_{\substack{i_1+\ldots+i_p=k \\ 1 \leqslant p \leqslant k}} A_{i_1,\ldots,i_p} \left\{ \sum_{q=1}^{p} \prod_{\substack{j=1 \\ j \neq q}}^{p} \frac{\Gamma(\rho + i_q)\,\Gamma(\rho + \mu + i_q)}{\Gamma(\rho)\,\Gamma(\rho + \mu)} - p \prod_{j=1}^{p} \frac{\Gamma(\rho + i_j)}{\Gamma(\rho)} \right\} = 0 \qquad (3)$$

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has no positive integral roots;

(b) $z^{-\rho}+z^{-\rho-1}$ is not a solution of equation (2), but equation (3) has positive roots $s_1, s_2, \ldots s_\nu$ and coefficients with numbers $s_1, \ldots, s_\nu$ of the polynomial $A_0 z^{-\rho}+\sum_{j=1}^{n_T} B_j z^{-(\rho+j)}$, where $B_j=A_j\Pi(\rho+j)$ and the A_j defined in equation (1) coincide with the corresponding coefficients of the z^{-1}-degree series expansion of the function $A_0\left(z-\frac{B_1}{A_0^2}\right)^{-\rho}$;

(c) $z^{-\rho}+z^{-\rho-1}$ is a solution of equation (2), the remaining conditions of (b) are satisfied, and, in addition, $B_2=\frac{\rho+1}{2}\cdot\frac{B_1^2}{A_0}$.

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"Gamma Distribution and Partial Sufficiency of Polynomials"

Tr. Mat. In-ta. AN SSSR [Works of Mathematics Institute, Academy of Sciences, USSR], Vol 111, 1970, pp 40-51, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V137 by the authors).

Translation: A characteristic property of the gamma distribution is noted, consisting of independence of the quantity

$$E_\sigma\left\{P\left(\frac{x_1}{\Sigma x_j},\ldots,\frac{x_n}{\Sigma x_j}\right)\middle|\Sigma x_j\right\},$$

where $x_1, \ldots, x_n$ is a repeated sample from the general set with unknown scale parameter σ, while P is a certain polynomial from σ. This property allows statistical interpretation in terms of partial sufficiency of the statistics $\sum_1^n x_j$ for the scale parameter σ. The proof is based on determination of the positively defined solutions of equation

$$\sum_{p=1}^{k}\sum_{l_1+\ldots+l_p=k} A_{l_1,\ldots,l_p} y^{(l_1)}\ldots y^{(l_p)} y^{k-p}=0,$$

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to which the condition of independence from σ of this arbitrary mathematical expectation is reduced.

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